



**A STANDARD OPERATING PROCEDURE
for**

RESPIRATORY PROTECTION

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U.S. General Services Administration
Safety and Environmental Management Team
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INTRODUCTION

This Standard Operating Procedure (SOP) has been developed for the purpose of outlining the procedures and practices for the selection, care and use of respiratory protection. It is to be used for developing the respiratory protection program, because the Occupational Safety and Health Administration (OSHA) respiratory protection standard requires a written procedure to be established governing the selection and use of respirators. Since individual respiratory protection in GSA is diversified, each activity engaging in work that requires respiratory protection must adhere to a written respiratory protection program prepared specifically for that activity. This SOP is not intended to define when respirators shall or shall not be used. This program must be closely monitored by Safety and Environmental Management professionals during surveys, inspections, or other visits. Special emphasis shall be placed upon provisions for emergencies.

This SOP is concerned with routine tasks requiring use of respiratory protection for other than: (1) oxygen-deficient atmospheres or (2) areas with atmospheres Immediately Dangerous to Life or Health (IDLH). Where oxygen-deficient atmospheres or IDLH areas exist, the person in charge of the specific activity shall not allow work to commence pending consultation with the regional Occupational Safety and Health (OSH) Program Office.

Appendix A of this SOP shall be used to **supplement** this SOP where asbestos-related work is being performed. The appendix outlines **additional** respiratory protection requirements where maintenance work involving asbestos will be conducted in buildings controlled by the General Services Administration (GSA). It is a supplement to the main part of this SOP, and is based on the general procedures and practices described in Part I. This supplement is based upon of the asbestos construction standard, 29 CFR 1926.58; paragraph (h) of which requires that, for certain asbestos-related work, the employer provide respirators and ensure their use in accord with the respiratory protection standard.

The basic OSHA criteria for respiratory protection are contained in Title 29, Code of Federal Regulations, Part 1910, Section 134 (29 CFR 1910.134). Depending upon the nature of the work being performed, other OSHA standards may apply. OSHA standards for respiratory protection are mandatory, and provide the basis for the GSA program. This SOP describes the

minimum acceptable program meeting GSA and OSHA criteria. Variations from this SOP are permissible **ONLY** if they provide equivalent or greater respiratory protection to affected persons **and** have been approved by the regional OSH Program Office.

The American National Standard, Practices for Respiratory Protection (ANSI Z88.2), is an excellent reference that should be available in all GSA locations having a need for respiratory protection.

OSHA standards may be obtained from the local OSHA area office, or purchased from the Superintendent of Documents, Government Printing Office, Washington, DC 20402. ANSI standards may be purchased from the American National Standards Institute, 11 West 42nd Street, New York, NY 10036.

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General Services Administration
Heartland Region
SELECTION, CARE AND USE OF RESPIRATORY PROTECTION

1. **POLICY.**

a. In every GSA workplace where there is reason to believe an airborne hazard exists, the regional Occupational Safety and Health (OSH) Program Office will conduct an evaluation to determine whether or not respiratory protection is needed to protect the health of the employee.

b. Under no circumstance will any respirator be purchased for use by GSA employees unless written approval has been obtained from the regional OSH Program Office. Once permission has been granted for a particular respirator to be used for a specific task, subsequent approval for stock replenishment is not necessary. However, if the respirator type, make, model or manufacturer changes for the task, written approval must again be obtained from the regional OSH Program Office.

NOTE: Manufacturer's approval does NOT automatically meet the regional OSH Program Office approval.

c. The issuance of respiratory protection shall be limited to employees of GSA (not contractors, visitors, etc.), and then **ONLY** where:

(1) The GSA activity has a written program for respirators that has been reviewed and approved by the regional OSH Program Office, **and**

(2) The employee using the respiratory protection has documented medical evidence in official files that they are qualified to use such protective devices, **and**

(3) The employee using the respiratory protection has documentation he or she has been properly trained in the respiratory protection to be used.

d. Respirators should never be issued as a convenience to employees. Respirators are issued based upon a need for employee protection, and then only after thorough evaluation by competent occupational safety and health professionals of the tasks to be performed and the hazards to which they will be exposed. Voluntary use of respirators is discussed in

paragraph 13, below.

e. Any contractor working in GSA-controlled space is responsible for the respiratory protection of its employees, and the implementation of its respiratory protection program.

f. Where the air may be oxygen-deficient and/or immediately dangerous to life or health (IDLH), work shall be immediately suspended, workers evacuated, and activities **NOT** allowed to continue pending review of the task by the regional OSH Program Office.

2. REFERENCES.

a. American National Standards Institute/Compressed Gas Association (ANSI/CGA) *Commodity Specification for Air*, G-7.1-1989.

b. National Institute for Occupational Safety and Health (NIOSH) *Pocket Guide to Chemical Hazards*.

c. OSHA 29 CFR 1910.134, *Respiratory Protection*.

d. OSHA 29 CFR 1910, Subpart Z, *Toxic and Hazardous Substances*.

e. OSHA 29 CFR 1926.1101, *Asbestos*.

f. DOT 49 CFR 173.34, *Qualification, Maintenance and Use of Cylinders*.

3. PERMISSIBLE PRACTICE. In the control of occupational diseases caused by breathing air containing harmful dusts, fogs, fumes, mists, gases, smokes, sprays, or vapors, the primary objective shall be to prevent atmospheric contamination. This shall be accomplished as far as practical by acceptable engineering controls. If it has been determined that engineering controls are not feasible, respiratory protection may be used, provided GSA and OSHA criteria are followed.

4. DEFINITIONS.

a. Asbestos Program Manager (APM). The person designated by GSA as being responsible for the implementation of the asbestos management and control program in the GSA-controlled facility. Responsibilities of the APM regarding the

respiratory protection program are outlined in [Appendix A](#) of this SOP.

b. End-of-Service-Life Indicator (ESLI). A system that warns the respirator user of the approach of the end of adequate respiratory protection (e.g., that the sorbent is approaching saturation or is no longer effective).

c. Fit Factor. A quantitative estimate of the fit of a particular respirator to a specific individual, and typically estimates the ratio of the concentration of a substance in ambient air to its concentration inside the respirator when worn.

d. High Efficiency Particulate Air (HEPA) Filter. A filter that is at least 99.97% efficient in removing monodisperse particles of 0.3 micrometers in diameter. Under NIOSH cartridge certification terminology, equivalent particulate filters are the N100, R100, and P100 filters.

e. Immediately Dangerous to Life and Health (IDLH). An atmosphere that poses an immediate threat to life, would cause irreversible adverse health effects, or would impair an individual's ability to escape from a dangerous atmosphere.

(1) **Oxygen deficient** atmospheres (oxygen content is less than 19.5%) are considered to be IDLH.

(2) **Oxygen enriched** atmospheres (oxygen content is greater than 23.5%) are considered to be IDLH.

(3) **Chemical** concentrations that are considered IDLH are listed in the NIOSH Pocket Guide to Chemical Hazards.

f. Qualified Person. An individual who is, by education or experience, considered competent in the respiratory protection field. Manufacturer's respirator representatives shall not arbitrarily be considered "competent". The regional OSH Program Office shall determine competency for purposes of this SOP. Supply Distribution Centers having a professional Safety Officer assigned, may determine competency by written agreement from the Regional OSH Program Office.

g. Task. As used herein, the term "task" means a major type of work regardless of the number of times performed, or the number of employees required to perform the work (task), regardless of the duration involved.

5. RESPONSIBILITIES.

NOTE: *As used herein, the term "Local Activity Manager" shall mean a GSA director/manager in charge of any GSA workplace where respiratory protection is required.*

a. Local Activity Managers must:

(1) Have available in each applicable workplace, an approved written respiratory protection program for the facility. The regional OSH Program Office is considered the approving authority.

(2) Issue each employee a personal respirator which is suitably marked so that there can be no doubt as to who is to use the respirator.

(3) Not allow the use of personally owned respirators in GSA workplaces.

b. Supervisors must:

(1) Rigidly enforce respirator program requirements.

(2) Take positive action to **immediately** remove defective respirators from service.

(3) Receive adequate respiratory training from "qualified person(s)."

(4) Ensure employees are properly indoctrinated in all aspects of the respiratory protection program prior to allowing respirator use.

(5) For each respirator task, prepare a written, detailed analysis of each job requiring use of a respirator. The analysis shall identify the following:

(a) The hazardous material(s) used which require a respirator. (When combinations of hazardous materials are encountered, such as asbestos and organic vapors, assistance from the regional OSH Program Office shall be obtained.)

(b) The make, model, cartridge(s), manufacturer, and NIOSH approval number for the desired respirator.

(c) The specific location of task where respirator will be required. Provide sufficient specificity to convey where work is done, such as with the building name and types of rooms (e.g., Federal Building machine rooms).

(d) A description of the task(s) to be performed (e.g., degreasing, spray painting, valve lagging repair and removal, etc.).

(e) Name and title of each employee who is to perform the job, a copy of the workers' position descriptions with a copy of the physician's authorization that such employee is medically qualified to use the respirator. (The list of affected employees is assembled in the field office for preparing schedules for medical fitness examinations. The physician's authorizations are assembled in the field office for inclusion in each employee's official personnel file.)

(6) Ensure employees clean their respirators after each use, following the manufacturer's instructions, and store them properly in a clean, dry, and protected environment.

CAUTION: Respirators shall not be placed in containers which contain puncturing devices (e.g., tool boxes).

(7) Report respirator malfunction to the appropriate supervisor or other individual designated by the Local Activity Manager.

(8) Ensure employees assigned respirators are included in the facility's Medical Surveillance Program and are provided medical examinations, as required.

c. [Regional OSH Program Office](#) will:

(1) Approve the facility written respirator protection program.

(2) Approve requests for particular respirators for specific tasks.

(3) Include, at least annually, a comprehensive evaluation of the facility respirator protection program during the course of all occupational safety and health (OSH) surveys.

NOTE: Use of a respirator by a GSA employee indicates a need for increased-risk OSH surveys, conducted more frequently than annually.

(4) Assure the training and medical surveillance programs comply with the guidelines required by OSHA standards for respiratory protection.

6. RESPIRATOR SELECTION REQUIREMENTS.

a. All respirators used by GSA employees shall be certified by the National Institute for Occupational Safety and Health (NIOSH) and used in compliance with the conditions of their certification. The approval shall be in the form of an approval number per the current edition of the NIOSH Certified Equipment List. To ensure that only approved respiratory protective equipment is used, it is recommended that a copy of the Certified Equipment List be maintained at the local activity where respiratory protection is used.

b. The selection of respirators shall be based upon:

(1) The nature of the hazardous operation or process.

(2) The type of respiratory hazard(s) must be identified and evaluated, including a reasonable estimate of employee exposures and identification of the contaminant's chemical state and physical form. Parameters to be evaluated include physical properties, physiological effects on the body, concentration of toxic material, and established immediately dangerous to life or health (IDLH) concentration for toxic material. Where exposures cannot be identified or reasonably estimated, the atmosphere shall be considered IDLH.

(3) The location of the hazardous area in relation to the nearest location having respirable air.

(4) The period of time for which respiratory protection must be provided.

(5) The activities of employees in the hazardous area.

(6) The physical characteristics and functional capabilities and limitations of the various types of respirators.

(7) Respirator protection factors.

c. Disposable respirators that cannot be fit tested are **NOT** authorized for use by GSA employees.

d. Respirators for IDLH Atmospheres. **ONLY** the following respiratory protection is approved for use by GSA employees in IDLH atmospheres:

(1) Full-facepiece pressure-demand self-contained breathing apparatus (SCBA) certified by NIOSH for a minimum service life of thirty (30) minutes, or

(2) Combination full-facepiece pressure-demand supplied-air respirator (SAR) with auxiliary self-contained air supply.

EXCEPTION: If the supervisor, in consultation with the regional OSH Program Office, can demonstrate that, under ALL foreseeable conditions, the oxygen concentration can be maintained within the following ranges, then any atmosphere-supplying respirator may be used:

Altitude (ft.)	Percent Oxygen
Less than 3,001	16.0 - 19.5
3,001 to 4,000	16.4 - 19.5
4,001 to 5,000	17.1 - 19.5
5,001 to 6,000	17.8 - 19.5
6,001 to 7,000	18.5 - 19.5
7,001 to 8,000	19.3 - 19.5

e. Respirators for Non-IDLH Atmospheres. The following respiratory protection is approved for use by GSA employees in non-IDLH atmospheres:

(1) For protection against **gases and vapors**:

(a) An atmosphere-supplying respirator, or

(b) An air-purifying respirator, provided that:

/1/ The respirator is equipped with canisters or cartridges and provided with an end-of-service-life indicator (ESLI) certified by NIOSH for the contaminant(s) of concern; or

/2/ If there is no ESLI appropriate for

conditions of the GSA workplace, a change-out schedule for the respirator's canisters or cartridges is implemented that will ensure they are changed before the end of their service life. In this case, the information and data relied upon and basis for the change schedule must be detailed in the facility's respirator analysis (see paragraph: "Responsibilities - Supervisors," above).

(2) For protection against **particulates**:

(a) An atmosphere-supplying respirator; or

(b) An air-purifying respirator equipped with NIOSH-certified filters appropriate for the particulates to which the employee will be exposed.

f. Filter, Cartridge, and Canister Selection Requirements.

(1) Only filters, cartridges, and canisters certified by NIOSH for the specific hazard(s) to which the employee will be exposed shall be utilized. For example, not all organic vapor cartridges provide adequate protection against all organic vapors (e.g., methylene chloride, ethylene oxide).

(2) Where diverse contaminants (such as organic vapors plus) are present in significant quantities (such as causing respiratory irritation degrading the usefulness of the protective device, or exposing the worker to contaminant concentrations above their OSHA Permissible Exposure Limits), respiratory protection may be provided by use of combination filters (such as combination organic vapor/HEPA filter cartridges), or supplied-air or self-contained breathing apparatus.

(3) In selecting filters, cartridges, or canisters for a respirator, the supervisor shall consult with the regional OSH Program Office.

7. **RESPIRATOR USE REQUIREMENTS.**

a. A respirator equipped with a facepiece shall **NOT** be worn if facial hair comes between the sealing periphery of the facepiece and the face or, if facial hair interferes with valve function. In this case, a powered air-purifying respirator must be used, and fit testing shall not be required.

b. Personal protective equipment (e.g., eyeglasses, hard hats, hearing protectors, etc.) shall be worn in such a manner that does not interfere with the seal of the facepiece to the face of the user.

c. The interchanging of respirator parts shall not be permitted. This ban includes the interchanging of parts among different manufacturers.

d. Employees shall be permitted to leave the work area to wash their faces whenever necessary to prevent skin irritation associated with respirator use.

e. All filters, cartridges, and canisters used in the workplace must be labeled and color coded with the NIOSH approval label. The label must not be removed and must remain legible. Filters, cartridges, and canisters not so labeled shall be immediately disposed of.

8. RESPIRATOR MAINTENANCE, CLEANING, STORAGE, AND REPAIR.

a. Maintenance.

(1) Employees shall inspect the respirator prior to each use to ensure proper working condition. The inspection must include all components of the respirator. Such inspections shall include, at a minimum, the following:

(a) A check of all elastomeric parts (straps, sealing surfaces, facepiece, etc.) for pliability and signs of deterioration.

(b) A check of respirator function, tightness of connections, and the condition of the various parts including, but not limited to, the facepiece, head straps, valves, connecting tube, and cartridges, canisters, or filters.

(2) Any defect observed during the course of the inspection, shall result in the respirator **IMMEDIATELY** being tagged "out of service," prohibiting its use pending repair or replacement of defective parts. Use, at any time, of a respirator with defects is strictly prohibited.

(3) If any defects are observed, the respiratory protection is **immediately** removed from service and **immediately** repaired or replaced.

b. Cleaning.

(1) Respirators shall be cleaned and disinfected **after each use** and shall be placed in a sealed container. In addition, if a respirator is used by more than one individual it shall also be cleaned and disinfected before being worn by a different user. Respirators found to be unprotected shall be inspected, cleaned and disinfected immediately, and placed in a sealed container.

(2) Each respirator user shall be instructed on the required cleaning procedures.

(3) The minimum respirator cleaning elements are outlined in Appendix B of this SOP.

c. Storage.

(1) Clean respirators shall be stored and protected against dust, dirt, sunlight, heat, extreme cold, excessive moisture, or damaging chemicals.

(2) New (unused) respirators should remain in their shipping packages. Used respirators will be cleaned and must be stored in a sealed plastic container (e.g., baggie).

(3) Open rack storage of respirators and accessories should be discouraged.

(4) Respirators shall not be placed in containers which contain puncturing devices (e.g., tool boxes).

d. Repair. Repairs or adjustments to respirators are to be made only by persons appropriately trained to perform such operations and shall use only the respirator manufacturer's NIOSH-approved parts designed for that specific respirator.

(1) Repairs shall be made only according to the manufacturer's recommendations and specifications for that respirator.

(2) Repairs and adjustments to reducing and admission valves, regulators, and alarms shall be made **ONLY** by the manufacturer or a technician trained by the manufacturer.

9. EMERGENCY USE/ESCAPE RESPIRATORY PROTECTION.

a. Inventory. An inventory of all emergency use/escape respirators in the region shall be maintained by the regional OSH Program Office. This inventory shall include at least the location where stored, make and model of the respirator, date cylinder was last hydrostatically tested, and date of expected end-of-service life.

b. Monthly Inspections. Respirators present in the workplace which are to be used only for emergency use or escape shall be inspected at least monthly.

(1) This monthly inspection include the following information:

(a) The serial number or other means of identifying the inspected respirator.

(b) Date of the inspection.

(c) Name of the individual performing the inspection.

(d) Findings of the inspection and any remedial action required.

(2) These inspections shall certify:

(a) The respirator is present, clean, in good repair, and stored correctly.

(b) Air and oxygen cylinders are fully charged; they must be refilled whenever its pressure falls to 90% of the manufacturer's recommended pressure level.

(c) If the respirator is a self-contained breathing apparatus (SCBA), the regulator and warning devices function properly.

(d) If cartridge-, canister-, or filter-equipped, the cartridges, canisters, or filters are present and have not reached their end-of-service life.

c. Cylinder Maintenance. Compressed gas cylinders are required to be hydrostatically tested periodically, including self-contained breathing apparatus (SCBA) cylinders. At a

minimum, SCBA cylinders will be hydrostatically tested as follows, per DOT 49 CFR 173.34:

- (1) Aluminum - every 5 years.
- (2) Non-aluminum - every 3 years.

10. RESPIRATOR FIT CHECKING AND FIT TESTING.

a. Fit Checking. Employees shall perform a user seal check **each time** they put on a tight-fitting respirator. The following procedures shall be used (unless the respirator's manufacturer has issued alternate procedures, which shall then be used):

- (1) Positive Pressure Check. The wearer:
 - (a) Covers the respirator inlets (cartridges, canisters, or seals),
 - (b) Gently inhales, and
 - (c) Holds breath for 10 seconds.
 - (d) The facepiece should collapse on the worker's face and remain collapsed.
- (2) Negative Pressure Check. The wearer:
 - (a) Covers the exhalation valve(s),
 - (b) Gently exhales, and
 - (c) The facepiece should hold the positive pressure for a few seconds. During this time, the worker should not hear or feel the air leaking out of the face-to-facepiece seal.

b. Fit Testing. All employees using **either** a negative- **or** positive-pressure tight-fitting facepiece must pass an appropriate qualitative fit test (QLFT) or quantitative fit test (QNFT).

- (1) Fit testing of respirators shall be accomplished:
 - (a) Prior to initial use,

(b) Whenever a different respirator facepiece is used (i.e., Fit test results **ONLY** apply to the make, model, and size of the respirator facepiece tested. A new fit test is required if another respirator, make, model, or size is issued.),

(c) Whenever the employee reports, or the supervisor or regional OSH Program Office makes visual observations of, changes in the employee's physical condition that could affect respirator fit (e.g., facial scarring, dental changes, cosmetic surgery, or an obvious change in body weight),

(d) At least every 12 months following (a), (b), or (c), above.

(e) Using the criteria outlined in [Appendix A](#) to 29 CFR 1910.134. This criteria explains general requirements as well as QLFT and QNFT protocols.

(2) Fit testing shall be accomplished **ONLY** by persons who are trained and experienced in the procedures required by OSHA for QLFT or QNFT.

(3) **Qualitative** fit testing methods may **ONLY** be used to fit test negative-pressure air-purifying respirators that must achieve a fit factor of 100 or less. Otherwise, quantitative fit testing methods must be used.

(4) The **quantitative** fit test has been passed if the fit factor determined is:

♦ □ 100 for tight-fitting half-facepieces, or

♦ □ 500 for tight-fitting full-facepieces.

(5) Evidence of fit testing shall be maintained by the supervisor.

(6) Qualitative fit testing is permitted **ONLY** for half-facepiece respirators.

c. [Records](#). A record of fit tests must be established and retained by the employee's supervisor until the next fit test is conducted.

11. TRAINING. Employees assigned respiratory protection shall be provided training prior to initial use and at least annually thereafter.

a. The training shall be provided by a qualified person. The regional OSH Program Office shall assist supervisors in providing proper respiratory protection training.

b. This training shall include explanations and discussions of:

(1) The respiratory hazard and how improper fit, use, or maintenance can compromise the protective effect of the respirator.

(2) The engineering and administrative controls being used and the need for respirators to provide protection.

(3) The reasons for selecting a particular type of respirator.

(4) The function, capabilities, and limitations of the selected respirator.

(5) The proper method of donning and removing the respirator, checking its fit and seal, and its operation.

(6) The proper wearing of the respirator.

(7) Respirator maintenance, cleaning, and storage.

(8) Respirator inspection procedures.

(9) Recognizing and handling emergency situations.

(10) Recognition of medical signs and symptoms that may limit or prevent effective use of the respirator.

c. Retraining is required annually and when:

(1) Workplace conditions change, or

(2) New types of respiratory protection is used, or

(3) Inadequacies in the employee's knowledge or use indicates a need for refresher training.

d. Training shall be documented; GSA employee training records shall be in accordance with current GSA training criteria. Evidence of training shall be maintained in the supervisor's training record.

12. MEDICAL EVALUATION. Using a respirator may place a physiological burden on employees that varies with the type of respirator worn, the job and workplace conditions in which the respirator is used, and the medical status of the employee.

a. General Requirement. **Before** an employee is fit tested or allowed to use respiratory protection in a GSA workplace, the employee shall be provided a medical evaluation to determine his or her ability to use that respiratory protection. When the employee is no longer required to use a respirator in the workplace, these medical evaluations may be discontinued.

b. Medical Evaluation Procedures.

(1) Medical evaluations shall be conducted **ONLY** by physicians or licensed health care professionals (hereafter referred to as "physician") approved by the regional OSH Program Office.

(2) These evaluations shall be performed using a medical questionnaire (provided in Appendix C of this SOP) **or** an initial medical examination that obtains the same information as the medical questionnaire. The physician shall determine which method to use (i.e., questionnaire only or questionnaire *plus* medical exam).

(3) The medical questionnaire shall be administered confidentially during the employee's normal working hours or at a time and place convenient to the employee. Furthermore, the questionnaire shall be administered in a manner that ensures the employee understands its content.

(4) The following information must be provided to the physician before he or she makes a recommendation concerning the employee's ability to use a respirator:

(a) The type and weight of the respiratory protection to be used by the employee,

(b) The duration and frequency of respiratory use

(including use for rescue and escape),

(c) The expected physical work effort involved when using the respirator,

(d) Additional protective clothing and equipment to be worn by the employee in addition to the respirator,

(e) The temperature and humidity extremes that may be encountered in the workplace during respirator usage,

(f) A copy of the OSHA standard for respirator use, 29 CFR 1910.134.

NOTE: *Any supplemental information provided previously to the physician regarding an employee need not be provided for a subsequent evaluation if the information and the physician remain the same.*

(5) A follow-up medical examination is required for employees that provides a positive response to any question among questions 1 through 8 in Section 2, Part A of the [Appendix C](#) questionnaire.

(6) The follow-up medical examination shall include any medical tests, consultations, or diagnostic procedures that the physician deems necessary to make a final determination regarding the employee's ability to safely use the assigned respiratory protection.

(7) The medical evaluations shall also assess and include examinations/tests required for the specific hazards to which the employee will be (or reasonably can be expected to be) exposed to, as outlined in 29 CFR 1910, Subpart Z (Toxic and Hazardous Substances).

c. [Additional Medical Evaluations](#). Additional exams shall be conducted if:

(1) The employee reports medical signs or symptoms related to his or her ability to use the respirator.

(2) If information from the respiratory program, including observations made during fit testing or OSH surveys, indicates a need.

(3) A change occurs in workplace conditions that may

substantially increase the physiological burden on an employee.

(4) The physician, regional OSH Program Office, or supervisor recommends reevaluation.

NOTE: Routine annual reviews of an employee's medical status is not required.

d. Payment of Medical Evaluations. Medical evaluations for respiratory protection shall be provided at no cost to the employee.

e. Medical Determination.

(1) **Before** an employee will be permitted to utilize respiratory protection, the physician conducting the medical evaluation must issue a **written** recommendation. This written recommendation shall state **ONLY** the following:

(a) Any limitations on respirator use related to the medical condition of the employee, or relating to the workplace conditions in which the respirator will be used, including whether or not the employee is medically able to use the respirator.

(b) The need, if any, for follow-up medical evaluations, and

(c) A statement that the physician has provided the employee with a copy of the physician's written recommendation.

(d) If the employee will utilize the respirator for protection against airborne **asbestos** exposures, the physician's written opinion shall also certify the employee was provided information regarding the increased risk of lung cancer attributable to the combined effect of smoking and asbestos exposure.

(2) If the respirator is a negative-pressure respirator and the physician finds a medical condition that may place the employee's health at increased risk if the respirator is used, the employee shall be provided a powered-air purifying respirator (PAPR) if the physician finds the employee is medically able to use a PAPR. If subsequent medical evaluations find the employee is medically able to use

a negative-pressure respirator, then a PAPR is no longer required to be provided (except as outlined in [Appendix A](#) of this SOP).

13. **VOLUNTARY RESPIRATOR USE.**

a. Policy.

(1) In some cases where the regional OSH Program Office has evaluated a workplace and determined that respiratory protection is not necessary to protect employees' health, some GSA employees may wish to utilize respiratory protection in that workplace.

(2) In such cases, GSA employees shall be permitted to obtain (at their own cost) and utilize personal respirators, provided the regional OSH Program Office evaluates this voluntary respirator use does not in itself create a hazard.

b. GSA Responsibilities. In the event an employee voluntarily uses respiratory protection, GSA shall:

(1) Determine that respiratory protection is not required to protect the health of the employee.

(2) Determine that the respirator itself does not create a hazard.

(3) Provide medical evaluations as outlined in this SOP to ensure the user is medically qualified to use the respirator.

EXCEPTION: If the only use of the respirator is the voluntary use of filtering facepieces (i.e., dust masks) a medical evaluation is not needed.

(4) Ensure the respirator is cleaned, stored, and maintained so that its use does not present a health hazard to the user.

(5) Provide the respirator user a copy of [Appendix D](#) of this SOP.

14. BREATHING AIR QUALITY.

a. Compressed breathing air shall meet the requirements for Type 1-Grade D breathing air as described in ANSI/CGA G-7.1-1989.

(1) Breathing air supplied by an airline shall be tested and certified at least **annually**. A copy of this certification shall be maintained in the regional OSH Program Office.

(2) Breathing air supplied by a cylinder shall be tested and certified **each time** the cylinder is filled. A copy of this certification shall be maintained in the regional OSH Program Office.

b. Compressors used to supply breathing air to respirators shall be constructed so that:

(1) Contaminated air will be prevented from entering the air-supply system.

(2) Moisture content is minimized to that the dew point at 1 atmosphere pressure is 10 deg. F below the ambient temperature.

(3) Suitable in-line air-purifying sorbent beds and filters are provided and maintained to further ensure breathing air quality. Such sorbent beds must be maintained and replaced/refurbished as recommended by the manufacturer. A log of the most recent maintenance/replacement/refurbishment must be maintained by the Facility Manager.

(4) Non-oil-lubricated air compressors must ensure that carbon monoxide levels do not exceed 10 ppm.

(5) Oil-lubricated air compressors must be equipped with a high-temperature alarm and/or a carbon monoxide alarm. If only a high-temperature alarm is used, the air supply must be monitored for carbon monoxide levels frequent enough to ensure carbon monoxide levels in the air stream do not exceed 10 ppm. The monitoring frequency shall be determined by the regional OSH Program Office.

c. Breathing air couplings must be incompatible with outlets for non-respirable worksite air or other gas systems. No asphyxiating substance shall be introduced into breathing

air lines.

d. Compressed oxygen must **not** be used in atmosphere-supplying respirators. In addition, oxygen in concentrations greater than 23.5% can **only** be used in equipment designed for oxygen service or distribution.

Appendix A

Program Requirements Involving Maintenance Work with Asbestos

1. **ASBESTOS PROGRAM MANAGER (APM) RESPONSIBILITIES.** The APM shall coordinate the implementation of the asbestos respiratory protection program with the GSA Local Activity Manager, each GSA worker's supervisor, and any contractor involved in the work. The APM shall ensure that the GSA Local Activity Manager:

a. Has a written respiratory protection program addressing asbestos-related work for the facility, approved by the regional OSH Program Office, available in each applicable workplace.

b. Issues each employee a personal respirator acceptable for the asbestos-related work in which the employee will be involved **and** which is suitably marked so that there can be no doubt as to who is to use the respirator.

c. Prohibit the use of personally-owned respirators for work on asbestos maintenance tasks.

d. Requires each supervisor to rigidly enforce respiratory protection program requirements during asbestos maintenance activities.

2. **ASBESTOS TASKS RESPIRATOR REQUIREMENTS.**

a. Commonly-used respirators for asbestos-related operations and maintenance program activities:

(1) For most asbestos-related operations and maintenance program activities, half-face, negative pressure respirator with high efficiency particulate air (HEPA) filter cartridges have been found to be appropriate. These activities are those for which airborne asbestos levels are below 2 fibers per cubic centimeter (2 f/cc) of air, as measured under the OSHA asbestos construction standard, 29 CFR 1926.58, where no other contaminants are present at significant levels, and where the air is neither oxygen-deficient nor immediately dangerous to life or health (IDLH).

(2) Powered air-purifying respirators must be used when:

(a) Airborne asbestos fiber levels are between 2 and 20 f/cc, or

(b) A worker chooses to use such a respirator

when a respirator is required (as per 29 CFR 1926.58(h)(2)(iii)), or

(c) A worker has facial hair which comes between the sealing periphery of the facepiece and the face, or hair which interferes with valve function, or

(d) The APM has deemed their use appropriate after consultation with the regional OSH Program Office.

(3) Where airborne asbestos fiber levels are above 20 f/cc, the maintenance work shall not continue, pending review of the task by the regional OSH Program Office. During this period, the affected area shall be sealed off, and only trained asbestos abatement workers using self-contained breathing apparatus (SCBA) or supplied-air respirators (SAR) operating in pressure demand mode (or greater protection) shall enter the area to control the release of asbestos and/or perform other required work.

(4) Where other contaminants (such as organic vapors or carbon monoxide) are present in significant quantities (such as causing respiratory irritation degrading the usefulness of the protective device, or exposing the worker to contaminant concentrations above their OSHA Permissible Exposure Limits), respiratory protection may be provided by use of combination filters (such as combination organic vapor/HEPA filter cartridges), or supplied-air or self-contained breathing apparatus.

(5) Where eye irritation may result from other contaminants, full-facepiece respirators, in conjunction with filters for the other contaminants or use of supplied-air or self-contained breathing apparatus, shall be used.

3. EMPLOYEE REQUIREMENTS.

Employees shall change respirator filter elements and dispose of them as asbestos waste whenever they detect an increase in breathing resistance. Employees shall dispose of respirator bodies as **asbestos waste** when they are damaged or worn out beyond repair; however, they should check with their supervisors before disposing of the respirator bodies to determine if they can be repaired.

4. **ASBESTOS TASK TRAINING REQUIREMENT.** All employees assigned respiratory protection against airborne asbestos exposures must be properly trained in all aspects of the asbestos respiratory protection program, including:

a. The nature and controls of both routine and emergency asbestos operations, including engineering controls, work practices, respirator use, and medical surveillance, with training by qualified persons.

b. The health effects associated with asbestos.

c. Information on smoking:

(1) The relation between smoking and asbestos;

(2) The prohibition against smoking in asbestos work areas;

(3) Contacts for smoking cessation programs and materials, and the availability of self-help smoking cessation material, with employees given, upon request, National Institutes of Health Publication No. 89-1647, Clearing the Air: A Guide to Quitting Smoking (available by calling 800-422-6237), and/or equivalent material described in the OSHA Asbestos Construction Standard, 29 CFR 1926.58, Appendix J; and

Appendix B

Respirator Cleaning Procedures

Appendix B to 29 CFR 1910.134 Respirator Cleaning Procedures

These procedures are provided for employer use when cleaning respirators. They are general in nature, and the employer as an alternative may use the cleaning recommendations provided by the manufacturer of the respirators used by their employees, provided such procedures are as effective as those listed here. Equivalent effectiveness simply means that the procedures used must accomplish the objectives set forth herein, i.e., must ensure that the respirator is properly cleaned and disinfected in a manner that prevents damage to the respirator and does not cause harm to the user.

Procedures for Cleaning Respirators

1. Remove filters, cartridges, or canisters. Disassemble facepieces by removing speaking diaphragms, demand and pressure- demand valve assemblies, hoses, or any components recommended by the manufacturer. Discard or repair any defective parts.
2. Wash components in warm (43 deg. C [110 deg. F] maximum) water with a mild detergent or with a cleaner recommended by the manufacturer. A stiff bristle (not wire) brush may be used to facilitate the removal of dirt.
3. Rinse components thoroughly in clean, warm (43 deg. C [110 deg. F] maximum), preferably running water. Drain.
4. When the cleaner used does not contain a disinfecting agent, respirator components should be immersed for two minutes in one of the following:

NOTE: Alcohol is NOT a disinfectant and shall not be used as such in the cleaning and disinfecting of respirators. Disinfectant swabs or solutions are available for respirator cleaning from safety supply companies or from respirator manufacturers.

a. Hypochlorite solution (50 ppm of chlorine) made by adding approximately one milliliter of laundry bleach to one liter of water at 43 deg. C (110 deg. F); or,

b. Aqueous solution of iodine (50 ppm iodine) made by adding approximately 0.8 milliliters of tincture of iodine (6-8 grams ammonium and/or potassium iodide/100 cc of 45%

alcohol) to one liter of water at 43 deg. C (110 deg. F); or,

c. Other commercially available cleansers of equivalent disinfectant quality when used as directed, if their use is recommended or approved by the respirator manufacturer.

5. Rinse components thoroughly in clean, warm (43 deg. C [110 deg. F] maximum), preferably running water. Drain. The importance of thorough rinsing cannot be overemphasized. Detergents or disinfectants that dry on facepieces may result in dermatitis. In addition, some disinfectants may cause deterioration of rubber or corrosion of metal parts if not completely removed.

6. Components should be hand-dried with a clean lint-free cloth or air-dried.

7. Reassemble facepiece, replacing filters, cartridges, and canisters where necessary.

8. Test the respirator to ensure that all components work properly.

Appendix C

Medical Evaluation Questionnaire

<p style="text-align: center;">Appendix C to 29 CFR 1910.134 OSHA Respirator Medical Evaluation Questionnaire</p>

- ♦ **To the employer: Answers to questions in Section 1, and to question 9 in Section 2 of Part A, do not require a medical examination.**

To the employee:

Can you read? (circle one): Yes/No

Your employer must allow you to answer this questionnaire during normal working hours, or at a time and place that is convenient to you. To maintain your confidentiality, your employer or supervisor must not look at or review your answers, and your employer must tell you how to deliver or send this questionnaire to the health care professional who will review it.

- ♦ **Part A. Section 1. (Mandatory) The following information must be provided by every employee who has been selected to use any type of respirator (please print).**

1. Today's date: _____
2. Your name: _____
3. Your age (to nearest year): _____
4. Sex (circle one): Male/Female
5. Your height: _____ ft. _____ in.
6. Your weight: _____ lbs.
7. Your job title: _____
8. A phone number where you can be reached by the health care professional who reviews this questionnaire (include the Area Code): _____
9. The best time to phone you at this number: _____
10. Has your employer told you how to contact the health care professional who will review this questionnaire (circle one):

Yes/No

11. Check the type of respirator you will use (you can check more than one category):

- a. _____ N, R, or P disposable respirator (filter-mask, non-cartridge type only).
- b. _____ Other type (for example, half- or full-facepiece type, powered-air purifying, supplied-air, self-contained breathing apparatus).

12. Have you worn a respirator (circle one): Yes/No

If "yes," what type(s): _____

♦ **Part A. Section 2. (Mandatory) Questions 1 through 9 below must be answered by every employee who has been selected to use any type of respirator (please circle "yes" or "no").**

1. Do you currently smoke tobacco, or have you smoked tobacco in the last month: Yes/No

2. Have you ever had any of the following conditions?

- a. Seizures (fits): Yes/No
- b. Diabetes (sugar disease): Yes/No
- c. Allergic reactions that interfere with your breathing: Yes/No
- d. Claustrophobia (fear of closed-in places): Yes/No
- e. Trouble smelling odors: Yes/No

3. Have you ever had any of the following pulmonary or lung problems?

- a. Asbestosis: Yes/No
- b. Asthma: Yes/No
- c. Chronic bronchitis: Yes/No
- d. Emphysema: Yes/No
- e. Pneumonia: Yes/No
- f. Tuberculosis: Yes/No
- g. Silicosis: Yes/No
- h. Pneumothorax (collapsed lung): Yes/No
- i. Lung cancer: Yes/No
- j. Broken ribs: Yes/No

- k. Any chest injuries or surgeries: Yes/No
- l. Any other lung problem that you've been told about:
Yes/No

4. Do you currently have any of the following symptoms of pulmonary or lung illness?

- a. Shortness of breath: Yes/No
- b. Shortness of breath when walking fast on level ground or walking up a slight hill or incline: Yes/No
- c. Shortness of breath when walking with other people at an ordinary pace on level ground: Yes/No
- d. Have to stop for breath when walking at your own pace on level ground: Yes/No
- e. Shortness of breath when washing or dressing yourself:
Yes/No
- f. Shortness of breath that interferes with your job:
Yes/No
- g. Coughing that produces phlegm (thick sputum): Yes/No
- h. Coughing that wakes you early in the morning: Yes/No
- i. Coughing that occurs mostly when you are lying down:
Yes/No
- j. Coughing up blood in the last month: Yes/No
- k. Wheezing: Yes/No
- l. Wheezing that interferes with your job: Yes/No
- m. Chest pain when you breathe deeply: Yes/No
- n. Any other symptoms that you think may be related to lung problems: Yes/No

5. Have you ever had any of the following cardiovascular or heart problems?

- a. Heart attack: Yes/No
- b. Stroke: Yes/No
- c. Angina: Yes/No
- d. Heart failure: Yes/No
- e. Swelling in your legs or feet (not caused by walking):
Yes/No
- f. Heart arrhythmia (heart beating irregularly): Yes/No
- g. High blood pressure: Yes/No
- h. Any other heart problem that you've been told about:
Yes/No

6. Have you ever had any of the following cardiovascular or heart symptoms?

- a. Frequent pain or tightness in your chest: Yes/No

- b. Pain or tightness in your chest during physical activity: Yes/No
- c. Pain or tightness in your chest that interferes with your job: Yes/No
- d. In the past two years, have you noticed your heart skipping or missing a beat: Yes/No
- e. Heartburn or indigestion that is not related to eating: Yes/No
- f. Any other symptoms that you think may be related to heart or circulation problems: Yes/No

7. Do you currently take medication for any of the following problems?

- a. Breathing or lung problems: Yes/No
- b. Heart trouble: Yes/No
- c. Blood pressure: Yes/No
- d. Seizures (fits): Yes/No

8. If you've used a respirator, have you ever had any of the following problems? (If you've never used a respirator, check the following space and go to question 9:)

- a. Eye irritation: Yes/No
- b. Skin allergies or rashes: Yes/No
- c. Anxiety: Yes/No
- d. General weakness or fatigue: Yes/No
- e. Any other problem that interferes with your use of a respirator: Yes/No

9. Would you like to talk to the health care professional who will review this questionnaire about your answers to this questionnaire: Yes/No

♦ **Questions 10 to 15 below must be answered by every employee who has been selected to use either a full-facepiece respirator or a self-contained breathing apparatus (SCBA). For employees who have been selected to use other types of respirators, answering these questions is voluntary.**

10. Have you ever lost vision in either eye (temporarily or permanently): Yes/No

11. Do you currently have any of the following vision problems?

- a. Wear contact lenses: Yes/No
- b. Wear glasses: Yes/No
- c. Color blind: Yes/No
- d. Any other eye or vision problem: Yes/No

12. Have you ever had an injury to your ears, including a broken ear drum: Yes/No

13. Do you currently have any of the following hearing problems?

- a. Difficulty hearing: Yes/No
- b. Wear a hearing aid: Yes/No
- c. Any other hearing or ear problem: Yes/No

14. Have you ever had a back injury: Yes/No

15. Do you currently have any of the following musculoskeletal problems?

- a. Weakness in any of your arms, hands, legs, or feet: Yes/No
- b. Back pain: Yes/No
- c. Difficulty fully moving your arms and legs: Yes/No
- d. Pain or stiffness when you lean forward or backward at the waist: Yes/No
- e. Difficulty fully moving your head up or down: Yes/No
- f. Difficulty fully moving your head side to side: Yes/No
- g. Difficulty bending at your knees: Yes/No
- h. Difficulty squatting to the ground: Yes/No
- i. Climbing a flight of stairs or a ladder carrying more than 25 lbs: Yes/No
- j. Any other muscle or skeletal problem that interferes with using a respirator: Yes/No

♦ **Part B Any of the following questions, and other questions not listed, may be added to the questionnaire at the discretion of the health care professional who will review the questionnaire.**

1. In your present job, are you working at high altitudes (over 5,000 feet) or in a place that has lower than normal amounts of oxygen: Yes/No

If "yes," do you have feelings of dizziness, shortness of breath, pounding in your chest, or other symptoms when you're

working under these conditions: Yes/No

2. At work or at home, have you ever been exposed to hazardous solvents, hazardous airborne chemicals (e.g., gases, fumes, or dust), or have you come into skin contact with hazardous chemicals: Yes/No

If "yes," name the chemicals if you know them: _____

3. Have you ever worked with any of the materials, or under any of the conditions, listed below:

- a. Asbestos: Yes/No
- b. Silica (e.g., in sandblasting): Yes/No
- c. Tungsten/cobalt (e.g., grinding or welding this material): Yes/No
- d. Beryllium: Yes/No
- e. Aluminum: Yes/No
- f. Coal (for example, mining): Yes/No
- g. Iron: Yes/No
- h. Tin: Yes/No
- i. Dusty environments: Yes/No
- j. Any other hazardous exposures: Yes/No

If "yes," describe these exposures: _____

4. List any second jobs or side businesses you have: _____

5. List your previous occupations: _____

6. List your current and previous hobbies: _____

7. Have you been in the military services? Yes/No

If "yes," were you exposed to biological or chemical agents (either in training or combat): Yes/No

8. Have you ever worked on a HAZMAT team? Yes/No

9. Other than medications for breathing and lung problems, heart trouble, blood pressure, and seizures mentioned earlier in this questionnaire, are you taking any other medications for any reason (including over-the-counter medications):
Yes/No

If "yes," name the medications if you know them: _____

10. Will you be using any of the following items with your respirator(s)?

- a. HEPA Filters: Yes/No
- b. Canisters (for example, gas masks): Yes/No
- c. Cartridges: Yes/No

11. How often are you expected to use the respirator(s) (circle "yes" or "no" for all answers that apply to you)?:

- a. Escape only (no rescue): Yes/No
- b. Emergency rescue only: Yes/No
- c. Less than 5 hours per week: Yes/No
- d. Less than 2 hours per day: Yes/No
- e. 2 to 4 hours per day: Yes/No
- f. Over 4 hours per day: Yes/No

12. During the period you are using the respirator(s), is your work effort:

- a. Light (less than 200 kcal per hour): Yes/No

If "yes," how long does this period last during the average shift: _____ hrs . _____ mins.

Examples of a light work effort are sitting while writing, typing, drafting, or performing light assembly work; or standing while operating a drill press (1-3 lbs.) or controlling machines.

b. Moderate (200 to 350 kcal per hour): Yes/No

If "yes," how long does this period last during the average

shift: _____ hrs. _____ mins.

Examples of moderate work effort are sitting while nailing or filing; driving a truck or bus in urban traffic; standing while drilling, nailing, performing assembly work, or transferring a moderate load (about 35 lbs.) at trunk level; walking on a level surface about 2 mph or down a 5-degree grade about 3 mph; or pushing a wheelbarrow with a heavy load (about 100 lbs.) on a level surface.

c. Heavy (above 350 kcal per hour): Yes/No

If "yes," how long does this period last during the average shift: _____ hrs. _____ mins.

Examples of heavy work are lifting a heavy load (about 50 lbs.) from the floor to your waist or shoulder; working on a loading dock; shoveling; standing while bricklaying or chipping castings; walking up an 8-degree grade about 2 mph; climbing stairs with a heavy load (about 50 lbs.).

13. Will you be wearing protective clothing and/or equipment (other than the respirator) when you're using your respirator: Yes/No

If "yes," describe this protective clothing and/or equipment:

14. Will you be working under hot conditions (temperature exceeding 77 deg. F): Yes/No

15. Will you be working under humid conditions: Yes/No

16. Describe the work you'll be doing while you're using your respirator(s):

17. Describe any special or hazardous conditions you might encounter when you're using your respirator(s) (for example, confined spaces, life-threatening gases):

18. Provide the following information, if you know it, for each toxic substance that you'll be exposed to when you're using your respirator(s):

Name of the first toxic substance: _____
Estimated maximum exposure level per shift: _____
Duration of exposure per shift: _____

Name of the second toxic substance: _____
Estimated maximum exposure level per shift: _____
Duration of exposure per shift: _____

Name of the third toxic substance: _____
Estimated maximum exposure level per shift: _____
Duration of exposure per shift: _____

The name of any other toxic substances that you'll be exposed to while using your respirator:

19. Describe any special responsibilities you'll have while using your respirator(s) that may affect the safety and well-being of others (for example, rescue, security):

Appendix D

Information for Employees Using
Respirators
When Not Required Under the Standard
(Voluntary Use Information)

<p style="text-align: center;">Appendix D to 29 CFR 1910.134 Information for Employees Using Respirators When Not Required Under the Standard</p>
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Respirators are an effective method of protection against designated hazards when properly selected and worn. Respirator use is encouraged, even when exposures are below the exposure limit, to provide an additional level of comfort and protection for workers. However, if a respirator is used improperly or not kept clean, the respirator itself can become a hazard to the worker. Sometimes, workers may wear respirators to avoid exposures to hazards, even if the amount of hazardous substance does not exceed the limits set by OSHA standards. If your employer provides respirators for your voluntary use, or if you provide your own respirator, you need to take certain precautions to be sure that the respirator itself does not present a hazard.

You should do the following:

1. Read and heed all instructions provided by the manufacturer on use, maintenance, cleaning and care, and warnings regarding the respirators limitations.
2. Choose respirators certified for use to protect against the contaminant of concern. NIOSH, the National Institute for Occupational Safety and Health of the U.S. Department of Health and Human Services, certifies respirators. A label or statement of certification should appear on the respirator or respirator packaging. It will tell you what the respirator is designed for and how much it will protect you.
3. Do not wear your respirator into atmospheres containing contaminants for which your respirator is not designed to protect against. For example, a respirator designed to filter dust particles will not protect you against gases, vapors, or very small solid particles of fumes or smoke.
4. Keep track of your respirator so that you do not mistakenly use someone else's respirator.